



November 14, 2012

1516 Ninth Street
Hearing Room A – First Floor
Sacramento, California 95814

10 a.m.

(Wheelchair Accessible)

THE COMMISSION WILL CONSIDER THE FOLLOWING ITEMS:

1. **CONSENT CALENDAR.** (Items on the Consent Calendar will be taken up and voted on as a group. A commissioner may request that an item be moved and discussed later in the meeting.)
 - a. **PIERS.** Possible approval of Purchase Order 12-445.03-007 for \$21,775 for renewal of the Ports Import/Export Reporting Service (PIERS) subscription for monthly marine products movement data. PIERS provides detailed fuel products data, on a monthly basis, for activity at all California ports. Fuels and Transportation Division staff use PIERS data to monitor the importation and exportation of fuel products, by marine vessel, into California. This data is analyzed and included in reports for Energy Commission information requests from outside agencies. The subscription agreement with PIERS is for one year beginning January 1, 2013. (ERPA funding.) Contact: Cam Nguyen.
 - b. **OPIS.** Possible approval of Purchase Order 12-445.03-008 for \$90,555 for renewal of the Oil Price Information Service (OPIS) subscription for petroleum and renewable fuel price data. OPIS offers one of the most comprehensive sets of daily and weekly retail, wholesale, and spot prices for transportation fuels. Staff use the data purchased from OPIS to perform assessments of market conditions, potential supply issues, and as baseline data for petroleum and renewable fuel price forecasts for the Integrated Energy Policy Report. Additional information provided in industry alerts allows staff to monitor current developments in the petroleum industry. The subscription agreement with OPIS is for one year, beginning January 1, 2013. (ERPA funding.) Contact: Cam Nguyen.
 - c. **DELOITTE MARKETPOINT LLC.** Possible approval of Purchase Order 12-435.01-006 for \$40,500 to Deloitte MarketPoint LLC to renew the Energy Commission's license to use the MarketBuilder platform to model natural gas parameters and scenarios for the Integrated Energy Policy Report. The license will be effective from January 1, 2013 to June 30, 2014. (ERPA funding.) Contact: Ruben Tavares.
 - d. **MCGRAW-HILL CONSTRUCTION COMPANY.** Possible approval of Purchase Order No. 12-445.03-003 for \$39,796 to McGraw-Hill Construction Company for floor space data to forecast commercial energy demand for the 2013 Integrated Energy Policy Report. (ERPA funding.) Contact: Ravinderpal Vaid.

- e. CITY OF GLENDALE. Possible approval of the City of Glendale's locally adopted building energy standards to require greater energy efficiency than the 2008 *Building Energy Efficiency Standards*. Contact: Joe Loyer.
- f. LOS RIOS COMMUNITY COLLEGE DISTRICT. Possible approval of Contract 200-12-005 for \$12,825 with Los Rios Community College District for Individual Performance Appraisal Training. This contract will provide Energy Commission supervisors and managers refresher training in effective performance appraisals for their staff. (ERPA funding.) Contact: Mark Hutchison.
- g. REGENTS OF THE UNIVERSITY OF CALIFORNIA. Possible approval of Contract 200-12-006 for \$169,000 with the Regents of the University of California to provide Professional Education and Management Development training for Energy Commission supervisors and managers. (ERPA funding.) Contact: Christina Edwards.
- h. ELECTRIC POWER RESEARCH INSTITUTE, INC. Possible approval of Amendment 4 to Contract 500-05-030 with Electric Power Research Institute, Inc. for a 12 month no-cost time extension to December 15, 2013, and to update the terms and conditions of the contract. (DOE funding.) Contact: Bryan Lee.
- i. UC ENERGY INSTITUTE. Possible approval of Amendment 1 to Contract 500-08-006 for a no-cost time extension of three months with the Regents of the University of California, to fund the Center for the Study of Energy Markets (CSEM) at the UC Energy Institute. CSEM will conduct research in market design and operation. The length of the original contract of \$2,394,375 was for 42 months. (PIER electricity and natural gas funding.) Contact: Mike Jaske.
- j. UNIVERSITY OF MISSOURI, COLUMBIA. Possible approval of Amendment 2 to Contract 500-08-022 with the University of Missouri, Columbia, for a 12 month no-cost time extension to develop an advanced, lightweight fuel tank with lower cost and increased range that will improve the economic competitiveness of natural gas vehicles. The time extension is needed due to issues with subcontractor manufacturing of critical materials. This amendment is also to update the terms and conditions. (PIER natural gas funding.) Contact: David Effross.
- k. GAS TECHNOLOGY INSTITUTE. Possible approval of Amendment 1 to Contract 500-09-004 with the Gas Technology Institute for a 12 month no-cost time extension to December 31, 2013, and to update the terms and conditions of the contract. (PIER Natural Gas funding) Contact: David Effross
- l. GAS TECHNOLOGY INSTITUTE. Possible approval of Amendment 3 to Contract 500-08-037 with Gas Technology Institute to replace a retired Disabled Veteran Business Enterprise (DVBE) subcontractor with a new DVBE subcontractor and update the project schedule. (PIER natural gas funding.) Contact: Leah Mohney.
- m. SENSUS MI. Possible approval of Amendment 1 to Contract 500-08-050 with Sensus MI for a 12 month, no-cost time extension to allow completion of measurement and verification activities, and completion of the final report. These activities are needed to validate the accuracy of the plug-and-play diagnostic and optimization technology for heating, ventilating, air conditioning, and refrigeration systems. This amendment will also replace one DVBE subcontractor

with another that is already assigned to the project. There is no change in the total amount of PIER funds for this project. (PIER electricity funding.) Contact: Heather Bird.

- n. IMAGEAIR, INC. Possible approval of Amendment 1 to Agreement GEO-10-001 with Imageair, Inc. to extend the existing 21 month agreement by 12 months. This extension is needed to allow the grantee additional time to collect specific satellite data necessary for completion of the project tasks. (GRDA funding.) Contact: Cheryl Closson.
- o. PORIFERA, INC. Possible approval of Amendment 1 to Agreement PIR-10-036 with Porifera, Inc. for a 12 month no-cost time extension. This extension is needed because Porifera's Department of Energy (DOE) American Recovery and Reinvestment Act (ARRA) award and final report due dates were extended beyond the term of the current Commission agreement. By extending the Commission agreement, all reports from the DOE ARRA agreement will be available to the Commission. (PIER electricity funding.) Contact: Cheryl Closson.
- p. PREMIUM POWER, INC. Possible approval of Amendment 1 to Agreement PIR-10-001 to extend the agreement by 18 months for a new end date of March 31, 2015. The amendment will allow for the development, shipment, installation, field testing, and monitoring of the upgraded version of Premium Power Corporation's Zinc-Bromide flow battery. This amendment will also allow for selection of a new demonstration site, if necessary; remove references to Wal-Mart and PowerBlock 150 in project documents; and revise identified personnel. There is no change in the total amount of PIER funds for this project. (PIER natural gas funding.) Contact: Anish Gautam.
- q. MC2 CONSULTING, INC. Possible approval of Amendment 1 to Agreement PIR-10-018 with mc2 Consulting, Inc, to do the following: remove all references to ConocoPhillips and its subsidiaries from all grant documents to allow for selection of a new demonstration site; extend the agreement by 12 months to January 11, 2014; remove key personnel names from the grant documents; reallocate the budget; and update the terms and conditions of the grant. There is no change in the total amount of PIER funds for this project. (PIER natural gas funding.) Contact: Anish Gautam.
- r. PRIMUS POWER CORPORATION. Possible approval Amendment 1 to Agreement PIR-10-029 with Primus Power Corporation to realign the task names and numbers of the California Energy Commission grant with those of the corresponding Department of Energy grant. The amendment will also reallocate direct labor and fringe benefit funds from the technician to the engineering position to accommodate changes in the Primus Power workforce. The overall work being performed and funding remain the same. (PIER electricity funding.) Contact: Johann Karkheck.
- s. DIVERSIFIED ENERGY CORPORATION. Possible approval of amendment 1 to Agreement PNG-07-005 with Diversified Energy Corporation for a five month no-cost time extension, change in host site to the Wyle Laboratories in San Bernardino for testing an integrated biomass gasification demonstration project, and minor changes to the Statement of Work. Contact: Prab Sethi.

- t. 2013 BUSINESS MEETING SCHEDULE. Possible approval of the Energy Commission's 2013 Business Meeting Schedule. Contact: Harriet Kallemeyn.
- 2. ENERGY COMMISSION COMMITTEE APPOINTMENTS. Possible approval of appointments to the Energy Commission's Standing Committees and Siting Case Committees. Contact: Kevin Barker. (5 minutes)
- 3. MARSH LANDING GENERATING STATION PROJECT (08-AFC-3C). Possible approval of a petition to amend the California Energy Commission Decision on the Marsh Landing Generating Station Project to redirect mitigation funds to a different recipient and allow annual mitigation payments made under BIO-8 to be used to provide a broader range of mitigation activities to address impacts to sensitive species and other biological resources occurring at the Antioch Dunes National Wildlife Refuge site. Contact: Christine Stora. (10 minutes)
- 4. WALNUT CREEK ENERGY PARK PROJECT (05-AFC-2C). Possible approval of a Petition to Amend the California Energy Commission Decision on the Walnut Creek Energy Park Project to adjust the Air Quality Conditions of Certification to be consistent with the South Coast Air Quality Management District's permit conditions. Contact: Camille Remy Obad. (10 minutes)
- 5. ALTERNATIVE AND RENEWABLE FUEL AND VEHICLE TECHNOLOGY PROGRAM REGULATIONS. Possible approval of proposed rulemaking proceeding to consider possible revision of Section 3103 of the Alternative and Renewable Fuel and Vehicle Technology (ARFVTP) Program regulations. (Title 20, California Code of Regulations, Section 3103.) This includes but is not limited to consideration of possible elimination of the Low Carbon Fuel Standard credit discount provisions set forth in subsection (b) of the regulation, as well as possible revisions to subsection (a) of the regulation. Contact: Jim McKinney. (10 minutes)
- 6. CALIFORNIA HOME ENERGY RATING SYSTEM PROGRAM (HERS). Request to approve an Order Instituting an Informational Proceeding to collect information necessary for refining aspects of the Commission's California Home Energy Rating System (HERS) Program, including (1) the Provider Quality Assurance program, (2) Rater discipline requirements, (3) organization of HERS Rater companies, and (4) conflicts of interest. Contact: Jenny Wu. (15 minutes)
- 7. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of 18 grant applications totaling \$1,508,507 from the Public Interest Energy Research (PIER) program's Energy Innovations Small Grants Solicitation 11-02. (PIER Electricity, Natural Gas and Transportation funding.) Contact: Raquel Kravitz. (10 minutes)
 - a. Electrical (11-02E)
 - i) California State University, Long Beach, *Adaptive Power Flow Controls for Distribution Circuits with Renewables*, \$49,999. This project will perform a feasibility study for design and development of an adaptive control scheme for distribution circuits with renewable energy generators, such as PV cells.
 - ii) SmartSense Energy, Inc. *Wireless Sensors for Underground Electricity Cables*, \$95,000. This project aims to determine the feasibility of a first-in-class sensing solution for electric utilities' underground cable networks.
 - iii) Davis Energy Group, Inc. *Development of a Low Leakage Retrofittable Outside Air Damper*, \$75,000. This project aims to create a reliable, low

leakage, low pressure drop outside air “vent” damper for use with residential cooling systems. The improved damper technology will serve to improve performance, reliability, and installability; facilitate compliance with Title 24 standards requirements; and reduce cost and improve cost-effectiveness.

- iv) Pacific Integrated Energy, Inc. *Proof-of-Concept Solar Energy Converter using Internal-Photoemission and Plasmonic Perfect Absorbers*, \$94,328. This project aims to determine the feasibility of Pacific Integrated Energy’s solar energy converter by building a proof-of-concept device in the form of a thin film meta-material structure that absorbs light as a “perfect absorber” and produces current via internal photoemission across a metal-semiconductor diode.
- v) David S. Watson, *Fast Demand Response and Energy Efficiency using Duct Pressure*, \$95,000. This project aims to determine the feasibility, costs and benefits of a wireless Pressure Optimization System to provide dispatchable fast-acting Demand Response and ongoing energy efficiency, while assuring proper air flow and comfort to occupants of medium and large commercial buildings. Measure duct static pressure at many locations where it matters most: at the inlet to each variable air volume (VAV) terminal box.
- vi) Solar Stream Innovations, *Non-Optical Concentration of Solar Energy for Low Cost Rooftop CHP*, \$95,000. This project aims to determine the feasibility of using a vacuum insulated heat pipe to aggregate the small heat inputs of several evacuated tube insulated heat pipes into a single high temperature output in order to increase the heat-to-electricity conversion efficiency of a rooftop solar Combined Heating and Power system.
- vii) Policy Consultants, LLC, *Residential Energy Intelligence (Res-Intel) Model*, \$49,840. This project aims to develop residential electricity monitoring and demand analysis software that integrates multiple databases to identify space conditioning mechanical failures as well as increase the effectiveness and efficiency of residential demand side management programs. Current residential energy monitoring and demand analysis software either ignores vintage, end use intensity, and household income, or relies on customers to voluntarily “opt-in” to report these variables, creating information failures due to low participation rates for energy audits and web surveys.
- viii) Calif. Polytechnic State University, *NOx Control with Hydrogen-Rich Biogas from Two-Phase Digestion*, \$94,924. This project aims to develop a low-cost NOx (Nitrous Oxide) control method by increasing the concentration of H₂ (Dihydrogen) in the biogas stream through two-phase anaerobic digestion with biogas sparging to strip H₂. This project seeks to demonstrate a new and potentially low-cost method for reducing NOx emissions from small scale generators or boilers that use biogas.
- ix) Erik Page & Associates, Inc., *Task Ambient Daylighting*, \$95,000. This project aims to determine the feasibility of an innovative lighting controls system for daylight harvesting – a process by which electric lighting is automatically reduced when an adequate level of daylight is present.

- x) Ballast Energy, Inc., *Low-cost, Ultra-thick Electrode Batteries for Grid-Level Storage*, \$95,000. This project aims to investigate the feasibility of building low cost, large format, lithium-ion batteries based on a novel, ultra-thick electrode approach.
 - xi) Modoc Analytics, LLC, *Real-Time Photovoltaic Cell Assessment Tool (RCAT) for Degradation Estimation*, \$95,000. This project aims to build a working prototype of a Real-time Cell Assessment Tool (RCAT) that can be used in the field to rapidly detect PV module degradation and failure. Critical to the economic viability and long term performance of large-scale solar arrays is the ability to detect faulty modules that may have degraded due to unanticipated environmental stresses.
- b. Natural Gas (11-02G)
- i) Protomatrix, *Renewable Energy Integrated Gas Network (REIGN)*, \$94,989. This project aims to determine and demonstrate the feasibility of a high pressure air-compressing wind turbine using an innovative, hydraulic approach. This technology, called Renewable Energy Integrated Gas Network, or REIGN, is aimed at improving the efficiency of natural gas turbines to a calculated 75% by supplementing the system with compressed air generated by wind turbines and stored in underwater reservoirs.
 - ii) University of California, San Diego, *Advanced Bioreactor Recycling System for Producing Energy and SNG (Synthetic or Substitute Natural Gas)*, \$94,906. This project aims to determine the potential total methane (and other energy) production from an advanced anaerobic bioreactor which employs the concept of landfill material recovery for energy production enabling re-use of the bioreactor cell. In a bioreactor landfill, biodegradable material decomposes at a higher rate; methane production is accelerated; other fugitive gaseous emissions are limited; and long-term monitoring and remediation may be simplified.
- c. Transportation Electric (11-02TE)
- i) University of California, Davis, *Analytic Tool to Support the Implementation of Electric Vehicle Programs*, \$50,000. This project aims to develop an analytic tool that electric utilities, local governments and the state can readily adopt to implement programs to support the development of plug-in electric vehicles.
 - ii) Romny Scientific, Inc., *Energy Efficient Vehicles Enabled by Thermo Electric Waste Heat Recovery*, \$94,691. This project aims to determine the feasibility of a new tubular energy generation module that reduces emissions and improves fuel economy in vehicles by converting exhaust heat into electricity.
 - iii) University of California, Santa Barbara, *Potential Rooftop Photovoltaic Electricity for Sustainable Transportation in California*, \$49,898. This project aims to determine the technical feasibility of generating sufficient solar PV power for battery electric vehicles to meet local demand (vehicle miles traveled or VMT) in sustainable communities across California.
- d. Transportation Natural Gas (11-02TNG)

- i) Discovery Fuel Technologies, LLC, *Catalysis of Natural Gas for a Diesel Engine*, \$95,000. This project aims to determine the feasibility of producing an oxygenate fuel that will serve as the source of ignition and allow use of natural gas with a diesel engine (compression ignition internal combustion engine).
 - ii) The Regents of the University of California, UC San Diego, *Simultaneous Reduction of NOx/CO/CH4 Emissions from Natural Gas Engine*, \$94,932. This project aims to determine the feasibility of pollutant reduction from compressed natural gas (CNG) engines in a three-way catalyst using a novel control system
- 8. RENOVITAS, LLC. Possible approval of Amendment 1 to Agreement GEO-10-003 with Renovitas, LLC to reduce the grant award from \$1,492,722 to \$264,229. The amendment would significantly reduce the project scope of work and budget from three phases of geothermal exploration work and drilling to only the initial exploration phase of geologic mapping and geophysical surveys on public lands near Wilbur Hot Springs. This amendment is necessary because Renovitas and its partner, SMUD, cannot complete the original project tasks in time to meet the funding liquidation/grant term deadline due to the agreement execution delay and delays in mineral and surface access rights acquisition. (GRDA funding.) Contact: Cheryl Closson. (5 minutes)
- 9. CALIFORNIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT. Possible approval of Contract 600-12-003 for \$200,000 with the California Department of Housing and Community Development (HCD) to conduct an assessment of the requirements and costs for electric vehicle charging infrastructure in single family dwellings, condominiums, and apartments. Using expertise of a specially-established, multi-agency and knowledgeable steering committee, HCD will review current reports and committee experience to address future code requirements for residential use. (ARFVTP funding.) Contact: Larry Rillera. (5 minutes)
- 10. OUREVOLUTION ENERGY & ENGINEERING. Possible approval of Agreement ARV-12-012 with OurEvolution Energy & Engineering for a grant of \$30,124 to construct, maintain and operate two workplace Level 2 electric vehicle charging stations in Arcata and Eureka, CA, Humboldt County. (ARFVTP funding.) Contact: Isaiah Larsen. (5 minutes)
- 11. ALTERNATIVE ENERGY SYSTEMS CONSULTING, INC. Possible approval of Agreement ARV-12-013 with Alternative Energy Systems Consulting, Inc. for \$69,446 to install five RWE Level 2 eStation Smart Systems, each consisting of 2 charging outlets for a total of 10 charging outlets, in a UC San Diego fleet application. The project seeks to expand UCSD's electric charging network and reduce its fleet petroleum consumption and GHG emissions. (ARFVTP funding.) Contact Aida Escala. (5 minutes)
- 12. DEPARTMENT OF GENERAL SERVICES. Possible approval of Agreement ARV-12-011 with the California Department of General Services (DGS) Office of Fleet and Asset Management (OFAM) for \$41,475 to upgrade the existing electrical system and install nine Level 2 electric charging stations at the State Garage in Sacramento. (ARFVTP funding.) Contact: Aida Escala. (5 minutes)
- 13. **Minutes:** Possible approval of the October 31, 2012, Business Meeting Minutes.
- 14. **Lead Commissioner or Presiding Member Reports.** A Lead Commissioner on a policy matter may report to the Commission on the matter and discussion may follow. A

Presiding Member on a delegated committee may report to the Commission on the matter and discussion may follow.

15. **Chief Counsel's Report:** The Energy Commission may adjourn to closed session with its legal counsel [Government Code Section 11126(e)] to discuss any of the following matters to which the Energy Commission is a party:

- a. *In the Matter of U.S. Department of Energy (High Level Waste Repository)*, (Atomic Safety Licensing Board, CAB-04, 63-001-HLW).
- b. *BNSF Railway Company v. US Department of Interior, California Energy Commission* (U.S. District Court Central District of California-Riverside, CV 10-10057 SVW (PJWx)).
- c. *Richard Latteri v. Energy Resources, Conservation and Development Commission, et al.* (Sacramento County Superior Court, 34-2011-99985).
- d. *Rick Tyler, et al v. Governor of California, Edmund G. Brown, Jr., et al.* (Alameda County Superior Court, RG12619687).
- e. *California Unions for Reliable Energy v. Energy Resources Conservation and Development Commission, Real Parties in Interest Ormat Nevada, Inc., ORNI 18 LLC, and ORNI 19 LLC* (Alameda County Superior Court, RG 12610669).
- f. *Asphalt Roofing Manufacturers Association v. California Energy Commission* (Sacramento County Superior Court, 34-2012-80001195).
- g. *City of Carlsbad v. Energy Resources Conservation and Development Commission (Carlsbad Energy Center, Real Party in Interest)* (California Supreme Court, S203634 and S204970).
- h. *California Independent System Operator Corporation* (Federal Energy Regulatory Commission, Docket No. ER12-2634).
- i. *In re Town of Mammoth Lakes*, (United States Bankruptcy Court for the Eastern District of California), Case No. 2012-32463).

The Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and circumstances exist that warrant the initiation of litigation; or that constitute a significant exposure to litigation against the Commission.

16. **Executive Director's Report.**

17. **Public Adviser's Report.**

18. **Public Comment:** People may speak up to five minutes on any matter concerning the Energy Commission, with the exception of items appearing elsewhere on this agenda or items related to pending adjudicative (certification or enforcement) proceedings.

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Adjournment of Hearings and Meetings: Depending upon time available and the orderly management of proceedings, the Commission may order adjournment (recess or postponement) of any noticed hearing or meeting, to be continued to the next day, another specific date or time, or to the next business meeting, as appropriate. Any such adjournment will be noticed at the time the order of adjournment is made (Government Code §§11128.5, 11129).